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EUGENE WIGNER 44

Dear Joshua,

Thank you very much for letting me have a copy of your article in the WASHINGTON POST. May I send you in return a copy of my paper in the PROCEEDINGS OF THE AMERICAN ~~PHYSICAL~~ Philosophical SOCIETY as soon as they arrive.

Let me tell you in the meantime that I cannot share your optimism concerning the explanation of the phenomenon of life in terms of present-day physics. If I look back into the past, I realize that the existence of an electromagnetic field could have been denied with arguments very similar to those now being advanced to claim the applicability of present-day physics to life. After all, nothing "exhibits tissues or functions that would except these" from being analyzed in terms of old-fashioned mechanics. In addition, it seems to me that it is not entirely modern to believe that the present completely determines the future. Modern quantum mechanics surely contradicts the idea of complete causality.

I realize that abstract statements of this nature won't convince any biologist, and it would be nice indeed if we could understand each other's point of view better. When I next get to Stanford, I will try to get hold of you for a discussion of these points.

Concerning your question: I believe it was Elsasser who first suggested that a computing machine large enough to take in all the complexities of a large living body would need more material than is contained in the universe. Greidanus, in various articles of the Dutch Academy expresses and supports the same thought -- I don't recall whether or not independently of Elsasser. These thoughts also seem to me to speak against the possibility of explaining life in terms of present-day physics, but I do not quite agree with them. Abstract reasoning can often outdo machines, and it would be obviously entirely impossible to prove the uniqueness of the decomposition of all numbers into primes by a straightforward application of calculating machines.

It was a pleasure to hear from you.

Sincerely,

Eugene

Eugene P. Wigner

EPW/JA